Remarks/Arguments:

Claims 1-3, 13-21, 25, 30-34, 36, and 38-48 are pending in the application. Claims 1, 2, 13-21, 25, 30-34, 36, 38, 40, 41, and 43-48 are rejected, and claims 3, 39, and 42 are objected to. With this amendment, independent claims 1, 36, 41, and 43 are amended. Support for the amendments to independent claims 1, 36, 41, and 43 can be found in the originally filed application at, for example, page 6, lines 14 and 15. No new matter has been added.

Claims 1, 13-21, 25, 34, 36, 38, 40, 41, and 43-47 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,912,847 ("Deeba") in view of U.S. Patent No. 6,679,052 to Nakatani et al. ("Nakatani"). Claims 2, 30-33, and 48 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Deeba as applied to claims 1 and 38 in view of legal precedent. The applicants respectfully submit that the currently pending amended claims are patentable over these cited references for at least the reasons set forth below.

Independent claim 1 recites a system comprising:

> a compression ignition engine configured to operate in a first, normal running mode to produce exhaust gas, and in a second mode, wherein when operating in the second mode the engine produces an exhaust gas comprising an increased level of carbon monoxide (CO) relative to the exhaust gas produced in the first mode;
>
> means to switch engine operation between the two modes in response to at least one of exhaust gas temperature or catalyst bed temperature; and ....

Thus, the means to switch engine operation between the two modes is recited to be in response to at least one of exhaust gas temperature or catalyst bed temperature. Claim 1 had previously recited that the means to switch engine operation between the two modes was in response to at least one of exhaust gas temperature, catalyst bed temperature, or, if a filter was present, a need to regenerate the filter. Independent claims 36, 41, and 43 have been amended in the same way.

To satisfy this claimed feature, the Examiner has implied that Deeba would have included a fuel injector in its system and has presumed that a fuel injector is responsive to at least one of exhaust gas temperature, catalyst bed temperature or, if a filter is present, a need to regenerate the filter. First, the applicants reserve the right to challenge the presumption that the system of Deeba would necessarily include a fuel injector. In any event, the applicants contend that a fuel injector would not respond to exhaust gas temperature or catalyst bed temperature. The applicants are not aware of any fuel injector that responds to either exhaust gas temperature or catalyst bed temperature. Because not all of the claimed features are present in the prior art references relied upon, the applicants respectfully request allowance of independent claims 1, 36, 41, and 43 and claims dependent thereon for this reason alone.

The applicants contend that the pending rejection of these claims should be withdrawn also because Nakatani does not support the statements made about it in the Office Action. More specifically, the Examiner has recognized that Deeba fails to disclose that the second mode produces an exhaust gas comprising an increased level of carbon monoxide (CO) relative to the exhaust gas produced in the first mode. To satisfy this limitation, the Examiner has alleged that Nakatani teaches that "as engine load increases, an exhaust gas air-fuel ratio is shifted toward stoichiometric ratio to accommodate the increase; and a CO concentration in the exhaust gas emitted from the engine becomes higher." Other than citing Figure 2 generally, no particular citations to Nakatani have been provided to support this understanding.

In response, the applicants note that Nakatani states:

> Fig. 2 indicates changes in the NO_x concentration in exhaust gas, the smoke, the CO (carbon monoxide) concentration, the HC (hydrocarbons) concentration and the exhaust gas air-fuel ratio that occur as the EGR rate is changed (emphasis added).
> Col. 6, lines 29-33.

Nakatani does not specify the particular relationship between CO concentration and engine load, as alleged by the Examiner. In fact, the portion of Nakatani describing Figure 2 fails to set forth a cause-and-effect relationship between engine load and CO concentration, as relied

upon in the Office Action to support the pending rejection. The only direct relationships of dependent variables to an independent variable provided by Figure 2 are: (1) air-to-fuel ratio versus exhaust gas recirculation (EGR) rate; (2) HC concentration versus EGR rate; (3) CO concentration versus EGR rate; (4) smoke versus EGR rate; and (5) NO_x concentration versus EGR rate. Nakatani states that Figure 2 shows how these dependent variables respond to one independent variable, the EGR rate. Col. 6, lines 28-33.

Nakatani does mention, at column 7, lines 42-48, that it is difficult to perform low-temperature combustion if the engine load is relatively high. Nakatani goes on to state, "in order to operate the engine with high load, it is necessary **to increase the amount of fuel injected** and the amount of air taken in" (emphasis added). Nakatani states that the EGR rate must be reduced to increase the amount of air taken in. Col. 7, lines 47 and 48. To make the pending rejection, the Office Action has apparently inferred a relationship between EGR rate, engine load, and CO concentration based on Figure 2 and this portion of Nakatani. The applicants contend, however, that inferring such a relationship is improper because Figure 2 shows the relationships between the five dependent variables and EGR rate, but does not account for what would happen to any of those five dependent variables should another independent variable, such as the amount of fuel injected, be altered. As seen from the emphasized text above, however, Nakatani contemplates altering this variable along with the EGR rate. The Examiner must certainly appreciate that the first dependent variable in Figure 2, the air-to-fuel ratio, would not increase linearly as the EGR rate is decreased if, concurrently with the reduction of the EGR rate, it is deemed necessary "to increase the amount of fuel injected." In fact, if the amount of fuel injected was increased at a greater absolute rate than the rate of decrease in EGR rate, then the air-to-fuel ratio would actually decrease as one views Figure 2 from right to left. One can certainly envision a similar effect on CO concentration. Thus, it is improper to infer any relationship among engine load, CO concentration, and EGR rate based on Figure 2, when Nakatani also discloses "increasing the amount of fuel injected" concurrently with decreasing the EGR rate at high loads. For at least this reason, the reliance on Nakatani is improper and the pending rejection must be withdrawn.

Claim 47 has been rejected along with the other independent claims in this application, namely claims 1, 36, 41, and 43. Claim 47 includes, however, at least the following features that are neither disclosed nor suggested by Deeba, namely:

> a compression ignition engine operable in ***a first, normal running mode to produce exhaust gas***, and operable in ***a second mode, which second mode produces an exhaust gas comprising an increased level of carbon monoxide (CO) relative to the exhaust gas produced in the first mode*** . . .
>
> the exhaust system comprising a catalysed component comprising ***(1) a first substrate comprising a first filter and a palladium (Pd) catalyst supported on a first support material associated with at least one base metal promoter and (2) a second substrate comprising a second filter and a platinum (Pt) catalyst*** (emphasis added).

Thus, claim 47 recites the features of: (1) a first substrate comprising a first filter and a palladium (Pd) catalyst supported on a first support material associated with at least one base metal promoter and (2) a second substrate comprising a second filter and a platinum (Pt) catalyst. Deeba, in contrast, fails to disclose both a Pd catalyst and a Pt catalyst, each on a separate filter. Rather, Deeba discloses (1) a diesel oxidation catalyst of trap material and platinum group metals deposited on suitable flow through carriers, and (2) wall-flow filters that contain catalytic agents including platinum on the catalyst support. (Deeba, at col. 7, lines 24-29 and col. 8, lines 38-46). Thus, Deeba fails to disclose each of its catalysts on a separate filter. Nakatani also fails to render this claim obvious. Thus, no *prima facie* case of obviousness has been made with respect to claim 47, and allowance of this claim is also respectfully requested.

In view of the amendments and arguments set forth above, Applicants submit that the pending claims are in condition for allowance. Notice to this effect is earnestly solicited.

Respectfully submitted,

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